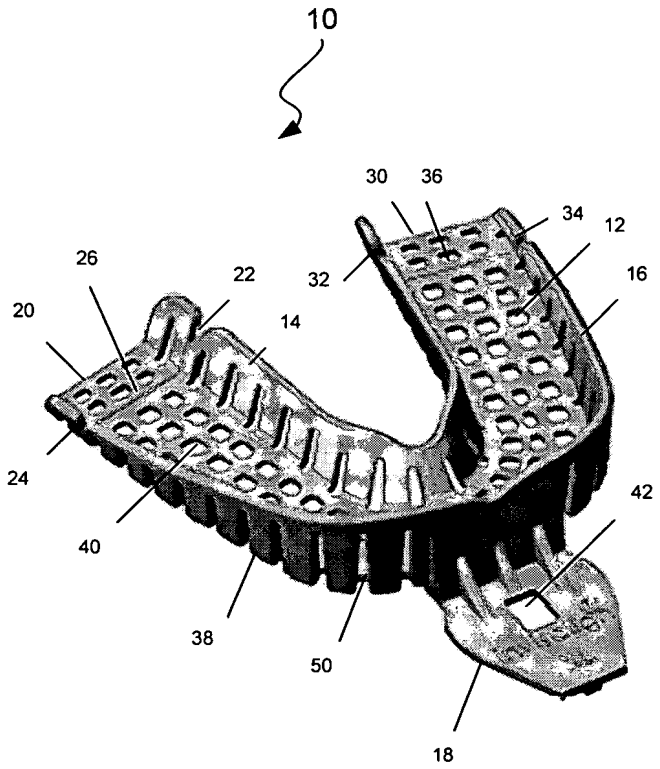

FIG. 1

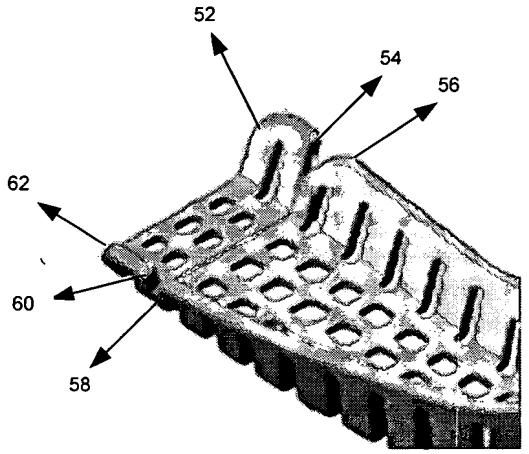

FIG. 1A

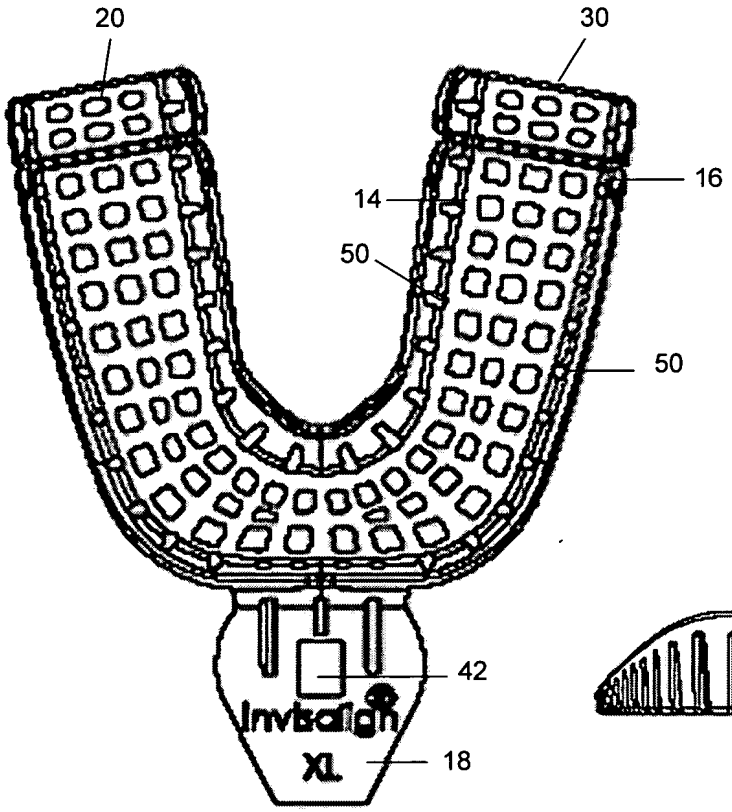

FIG. 2

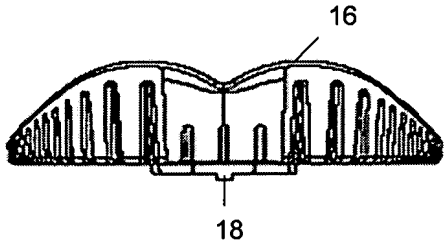

FIG. 3

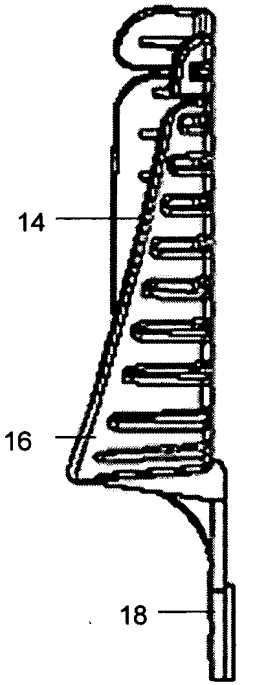

FIG. 4

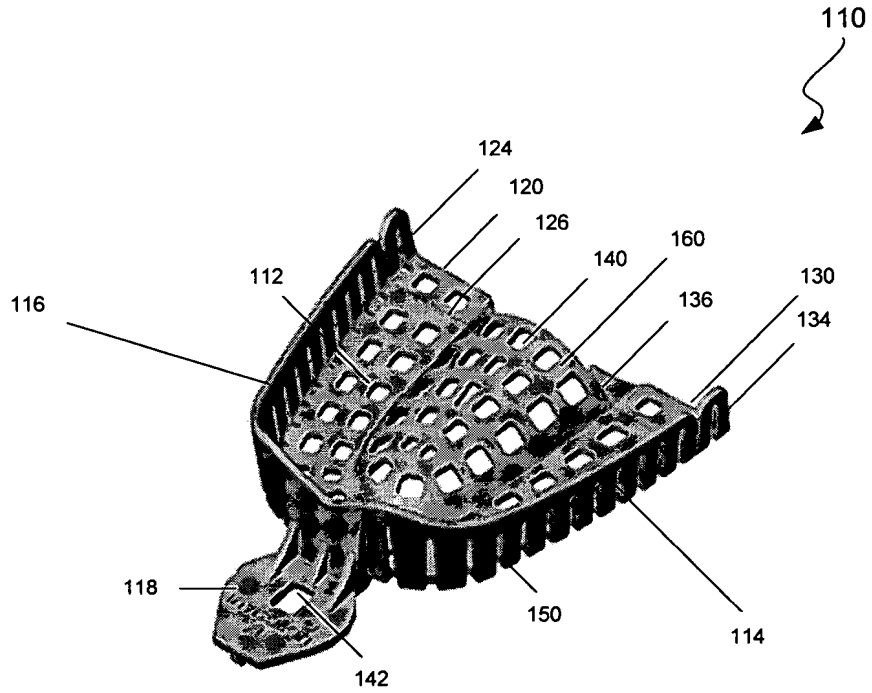

FIG. 5

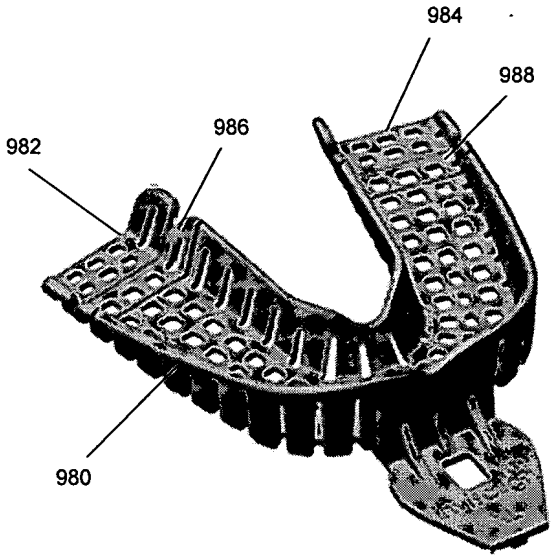

FIG. 6

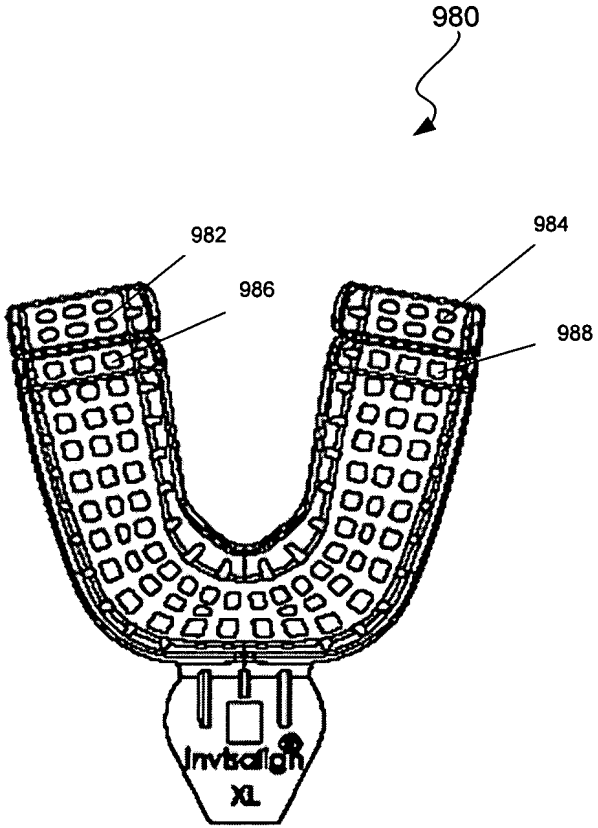

FIG. 7

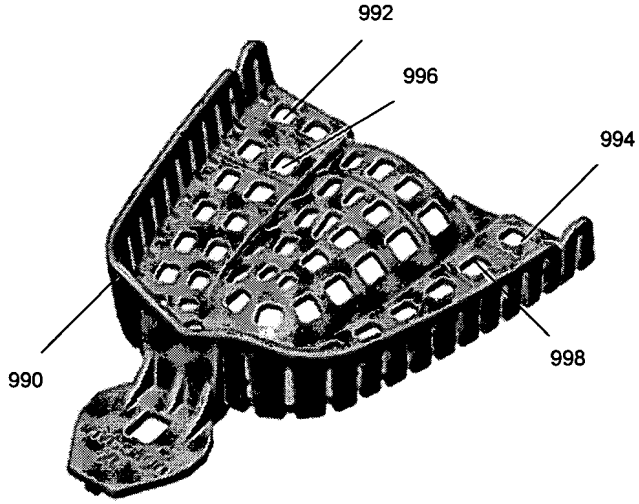

FIG. 8

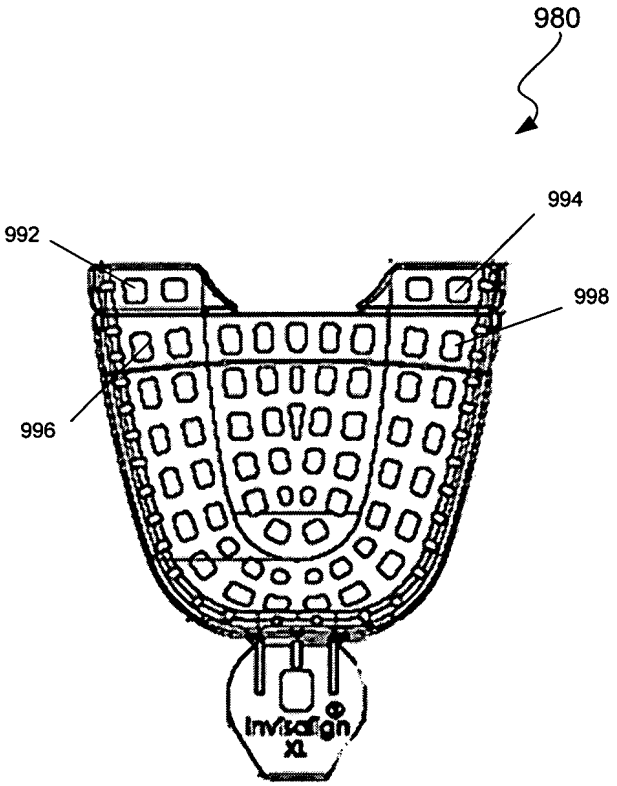

FIG. 9

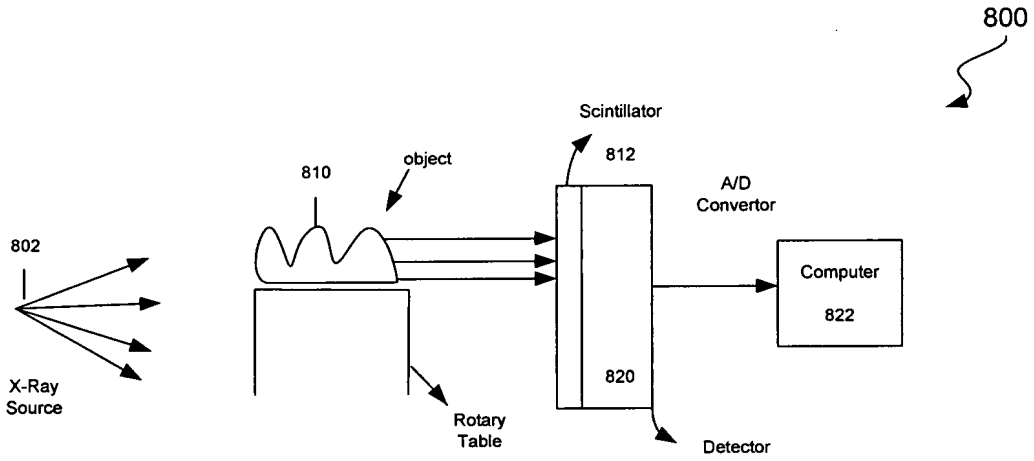
800
Scintillator
812
object
810
A/D
Convertor
802
Computer
822
820
X-Ray
Source
Rotary
Table
Detector

FIG. 10

1. Impression of a patient is taken in a radiopaque tray (902).
2. A bite of the patient will be taken. A suitable material for capturing the bite is PVS material in order to capture detailed tooth geometry. Wax bites may also be used but results can be worse based on definition on the bite (904).
3. The upper, lower and the bite will be scanned together in the CT machine (906).
4. Once scanned, the upper and lower impression scanned data is digitally reversed to make a positive. This is done by identifying the inner most surface of the impression material and extracting it from the rest of the data using a largest connected component algorithm (908).
5. Once the upper and lower data is obtained, they will be aligned into a bite position using the bite material scanned (910).
6. The models are digitally detailed. Any excess material or defects in the material will have to be cleaned up (process is known as detailing) (912).
7. Once the models are cleaned, the final bite needs to be set. Models are articulated by an operator till the relative position closely resembles that of the actual mouth (914).
8. The model is now ready for treatment. The teeth are already cut as part of the detailing operation (916).

FIG. 11